

EXECUTIVE SUMMARY

ES.1 Introduction

This Environmental Impact Statement (EIS) has been prepared by the U.S. Army Corps of Engineers (USACE), Los Angeles District, and the U.S. Environmental Protection Agency, Region 9 (EPA) to evaluate the final designation of an ocean dredged material disposal site (ODMDS) located offshore of Newport Beach, California (known as LA-3), and to re-evaluate the management of the existing LA-2 ODMDS located offshore of the Los Angeles/Long Beach Harbor complex in California (Figure ES-1). These sites have been and will continue to be utilized for the disposal of clean dredged material originating in the Los Angeles and Orange County region. This EIS is issued in accordance with Title I of the Marine Protection, Research, and Sanctuaries Act (MPRSA), and as required by EPA's national policy on the designation of ocean disposal sites (39 FR 37119, October 21, 1974).

This document has been prepared in compliance with EPA's site designation criteria (40 CFR 228) and it evaluates a number of alternatives for the disposal of dredged material generated in the region. The objective of this action is to provide for the economically feasible management of dredged material ocean disposal for the Los Angeles/Orange County region in a manner that will not cause unreasonable degradation of the ocean with respect to the marine environment and human health.

The USACE and EPA have identified as the preferred alternative the final designation of the LA-3 ODMDS managed at a maximum annual dredged material disposal quantity of 2,500,000 yd³ (1,911,000 m³) and the management of LA-2 at an increased maximum annual dredged material disposal quantity of 1,000,000 yd³ (765,000 m³) for the ocean disposal of dredged material from the Los Angeles and Orange County region.

The LA-3 ODMDS was an interim disposal site and has been used historically for the disposal of material dredged primarily from Newport Harbor and Bay. As discussed in Chapters 1 and 2 of this EIS, during the 1998 U.S. Geological Survey review a substantial amount of dredged material was noted outside the interim site boundaries.

The proposed action would shift the center of the LA-3 site approximately 2.4 km (1.3 nmi) to the southeast of the interim LA-3 site as shown on Figure ES-1. The circular boundary of the permanently designated LA-3 site would be centered at 33°31'00" N and 117°53'30" W and would have a 915-meter (3,000-foot) radius. By shifting the center of

FigureES-1,B&W

the LA-3 site, the permanent site would not only encompass a region that is already disturbed by dredged material, but also would be located on a flat, depositional plain that will be more amenable to monitoring via precision bathymetry.

The LA-2 site is a permanently designated ODMDS that has been historically managed at an annual disposal quantity of 200,000 yd³ (153,000 m³) for the disposal of material dredged primarily from the Los Angeles/Long Beach Harbor complex.

The availability of suitable ocean disposal sites to support ongoing maintenance and capital improvement projects is essential for the continued use and economic growth of the vital commercial and recreational areas in the region. Dredged material will not be allowed to be disposed of in the ocean unless the material meets strict environmental criteria established by the EPA and USACE.

ES.2 Alternatives

A number of alternatives were considered in the EIS to determine the alternative that best meets the goals and objectives of the proposed action while minimizing the potential for environmental effects. The alternatives originally considered include:

- Local Use of LA-3 and LA-2 (Preferred Alternative [Alternative 3])
- No Action (Alternative 1)
- Maximize Use of LA-2 (Alternative 2)
- Maximize Use of LA-3 (Alternative 4)
- Upland disposal at a sanitary landfill
- Beach replenishment
- Ocean disposal at a site at a similar depth to LA-3
- Ocean disposal at a shallow water site
- Ocean disposal at a deep water site

Upland disposal and beach replenishment are considered on a case-by-case basis prior to the issuance of permits for ocean disposal. Nevertheless, preliminary analysis indicated that these two options are not sufficient for handling the quantities of dredged material that are anticipated to be generated in the region. Additionally, preliminary analysis indicated that ocean disposal at a shallow water site, deep water site, or at a site with a depth similar to that of LA-3 was either inadequate, not feasible, or would be more environmentally damaging than the remaining alternatives. Consequently, these five alternatives were eliminated from further consideration in the EIS. The remaining four alternatives are evaluated in detail.

ES.3 Affected Environment

The following sections summarize the physical, biological, and socioeconomic environments of the preferred and other alternatives.

ES.3.1 Physical Environment

The LA-2 and LA-3 ocean disposal sites are located in the offshore waters of southern California, between Palos Verdes Point and Dana Point.

The proposed LA-3 site is located on the slope of Newport Canyon centered at a depth of approximately 490 m (1,600 ft), approximately 8.5 km (4.5 nmi) southwest of the entrance to Newport Harbor (33°31'00" N and 117°53'30" W). The bottom topography is gently sloping from approximately 460 to 510 m (1,500 to 1,675 ft). Situated at the foot of a submarine canyon, this area would be expected to receive sedimentation from erosion and nearshore transport into the canyon.

The LA-2 site is located approximately 9.3 km (5 nmi) southwest of the breakwater at San Pedro and 38 km (20.5 nmi) from the Newport Harbor entrance (33°37'06" N and 118°17'24" W). The site is near the top edge of the continental slope in approximately 110 to 340 m (360 to 1,115 ft) of water. The LA-2 site is located just south of the San Pedro Valley submarine canyon.

The climate of southern California coastal and offshore areas is classified as Mediterranean coastal, with warm dry summers and relatively wet, mild winters. Extreme variations in yearly temperature are uncommon. Although the air quality offshore and near the coast is generally good, the air quality inland in the South Coast Air Basin is generally considered poor with some of the worst air quality in the nation. This is in part because the predominant westerly winds carry pollutants inland. Occasionally, strong easterly Santa Ana winds carry pollutants from the inland areas offshore. Under these circumstances, air quality and visibility in the offshore areas may be significantly reduced.

The primary ocean current in the study area is the California Current, a diffuse and meandering water mass that generally flows to the southeast at a maximum speed of about 10 to 15 centimeters per second (cm/sec; 0.19 to 0.29 kn). Most of the equatorward (toward the equator) transport of the California Current occurs 200 to 500 km (108 to 270 nmi) from shore, with maximum speeds occurring about 300 km (162 nmi) offshore.

South of Point Conception, the California Current diverges and the offshore component continues to flow southeast while another component flows shoreward (toward the coast) and upcoast (parallel to shore and northerly), resulting in a counterclockwise, nearshore gyre known as the Southern California Countercurrent. During spring, however, the countercurrent can be altered such that flow enters the Southern California Bight (SCB), but transport is equatorward rather than poleward (toward the North Pole).

Shoreward of and below the California Current is the poleward-flowing California Undercurrent, the flow of which is concentrated over the continental slope. In the SCB, the California Undercurrent flows nearshore over the continental slope rather than offshore, spatially separating it from the California Current. The Undercurrent is comparatively narrow, with the high-speed core centered over the continental slope. The California Current, Countercurrent, and Undercurrent all have seasonal speed maxima in late summer.

Near-bottom currents at LA-3 are low (usually less than 6 cm per second [cm/sec]; [0.2 feet per second {ft/sec}]) and always less than 16 cm/sec [0.53 ft/sec]) compared with those at LA-2 (usually less than 12 cm/sec [0.4 ft/sec] and always less than 40 cm/sec [1.3 ft/sec]). The potential for erosion of disposed sediments is therefore greater at LA-2 than at LA-3. Essentially no erosion is predicted for the LA-3 site.

Sediments within the LA-3 site generally show a larger percentage of sand and gravel and a lower percentage of silt compared with sediments at stations surrounding the site and at reference sites. Conversely, sediments in the LA-2 site and surrounding areas are

composed primarily of silt and sand, lesser amounts of clay, and relatively small gravel fractions. Sediments within and adjacent to the LA-2 site boundary differ from those at reference areas in that the reference area sediments are composed of smaller amounts of fines and larger fractions of sand. Differences in sediment composition between the disposal sites and reference areas may be attributed to disposal activities. Both sites show varying degrees of chemical contamination.

ES.3.2 Biological Environment

The marine organisms found at the LA-2 and proposed LA-3 sites are typical of those found throughout the Southern California Bight. Plankton distributions tend to be patchy, and individual stations sampled more than once at the disposal sites exhibit great variation. In general, greatest concentrations of plankton are found in the SCB in early fall and spring months, and abundances are lowest in the late fall and winter months. Benthic invertebrates are small organisms, or fauna, that live within the sediments on the sea floor. These infaunal organisms are highly dependent on the sediments in which they live for food and protection. At the LA-2 study area, density per sampled station ranged from 743 to 3,363 individuals/m², species richness ranged from 48 to 167 species, and Shannon-Wiener species diversity ranged from 2.69 to 4.23. At the LA-3 study area, density per sampled station ranged from 193 to 623 individuals/m², species richness ranged from 22 to 52 species, and species diversity from 2.43 to 3.46.

The epibenthic and pelagic invertebrate species compositions at the LA-3 study area are typical of those seen on the slope of the Southern California Bight at the LA-3 depth.

The five most abundant species at all LA-3 sites surveyed in 2000-2001 were a complex of the Pacific heart urchin (*Brissopsis pacifica*) and the California heart urchin (*Spatangus californicus*), the northern heart urchin (*Brisaster latifrons*), the fragile sea urchin (*Allocentrotus fragilis*), and the sea star *Zoroaster evermanni*. Likewise, the species composition at the LA-2 site is typical of that seen on the outer shelf - upper slope at the LA-2 depth. The five most abundant species at all LA-2 sites surveyed in 2000-2001 were the fragile sea urchin, northern heart urchin, Pacific heart urchin, California heart urchin, and the Pacific/California heart urchin complex.

The fish species composition at the LA-3 study area is typical of that seen in demersal fish communities on the slope at the LA-3 depth. During 2000-2001 surveys, the most abundant species taken were longspine thornyhead (*Sebastolobus altivelis*), dogface witch-eel (*Facciolella gilberti*), Dover sole, and shortspine thornyhead (*Sebastolobus alascanus*). The fish species composition at the LA-2 site is also typical of that seen in demersal fish communities on the slope at the LA-2 depth. Because of the shallower depth at LA-2, a different species assemblage is seen compared to that at the LA-3 study area, with only seven species occurring at both locations. During the surveys the most abundant species taken at LA-2 were Pacific sanddab (*Citharichthys sordidus*), slender sole (*Lyopsetta exilis*), and shortspine combfish (*Zaniolepis frenata*). Fishes found throughout the SCB, including the LA-2 and LA-3 study areas, exhibit varying degrees of tissue bioaccumulation of contaminants. There is no evidence that tissue bioaccumulation found in fish within the disposal site areas differs from that of the region as a whole.

Seabirds and marine mammals found at the LA-2 and LA-3 study areas are typical of those found throughout the SCB and include Western gull (*Larus occidentalis*), sooty shearwater (*Puffinus griseus*), elegant tern (*Sterna elegans*), common dolphin (*Delphinus delphis*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), bottlenose dolphin

(*Tursiops truncatus*), and California sea lion (*Zalophus californianus*). Only one species occurs, or has a high potential to occur, in the LA-2 and LA-3 study areas that is listed by the federal government as threatened or endangered: California brown pelican (*Pelecanus occidentalis californicus*). In addition, elegant tern (*Sterna elegans*) is a state and federal species of concern and was observed at LA-3 in summer 2000.

There are twenty-two Marine Protected Areas (MPAs) in the general vicinity of the LA-2 and proposed LA-3 sites.

ES.3.3 Socioeconomic Environment

The LA-2 and proposed LA-3 disposal sites are located in the Los Angeles commercial fishing area. There are currently no known registered mariculture operations on the southern California coast between Palos Verdes Point and Dana Point. There are, however, a variety of commercial fisheries in the LA-2 and LA-3 study areas.

Commercial fishing in the San Pedro region consists predominantly of purse-seining, crab and lobster trapping, and set-netting. The principal market species in this region include Pacific sardine (*Sardinops sagax*), market squid (*Loligo opalescens*), Pacific mackerel (*Scomber japonicus*), jack mackerel (*Trachurus symmetricus*), northern anchovy (*Engraulis mordax*), red urchin (*Strongylocentrotus franciscanus*), California halibut (*Paralichthys californicus*), California barracuda (*Sphyrna argentea*), California spiny lobster (*Panulirus interruptus*), and swordfish (*Xiphias gladius*).

A setline dory fishery off Newport Beach has existed since 1891, one of the few traditional dory fisheries remaining on the West Coast. Principle species landed in this localized fishery include sablefish (*Anoplopoma fimbria*), thornyhead (*Sebastolobus* spp.), and rockfish (*Sebastes* spp.). While dory landings of these species pale in comparison to overall commercial landings, they represent a fishery that has changed little in over 110 years.

The Ports of Los Angeles and Long Beach comprise one of the most important shipping complexes in the nation. In 2002 the Port of Long Beach ranked 8th in the nation in terms of total tonnage handled (61.6 million metric tons [67.9 million short tons]) while the Port of Los Angeles ranked 12th in the nation with 47.4 million metric tons (52.2 million short tons) handled. The harbors handle all types of commercial cargo including coal, petroleum and petroleum products, crude materials (inedible materials not including fuels), primary manufactured goods, food and farm products, manufactured equipment, machinery and products, and other miscellaneous cargos.

Vessel traffic within the San Pedro Channel traveling to and from the harbors must follow a system of traffic separation schemes (TSS) and port access routes (PAR). The TSS consists of a northbound coastwise traffic lane and a southbound coastwise traffic lane with an intermediate separation zone. Additionally, the area directly outside of the Ports of Los Angeles and Long Beach is designated a Regulated Navigation Area (RNA). Vessels within the RNA are subject to strict navigation regulations designed to ensure safe vessel separations and operating conditions. The proposed LA-3 site is approximately 20 km (10.8 nmi) east of the northbound coastwise traffic lane of the southern TSS and approximately 24 km (13 nmi) southeast of the RNA. The LA-2 site is located within the separation zone between the northbound and southbound coastwise traffic lanes of the northern TSS and is partially contained within the designated RNA. Additionally, powered vessels over a certain size including tugboats transporting disposal

barges are required to participate in the Los Angeles-Long Beach Vessel Traffic Service (VTS). LA-2 and the proposed LA-3 sites lie within the VTS monitoring area.

The coastal waters between San Diego and the Los Angeles Harbor are heavily utilized by the military. Marine Corps Base Camp Pendleton, located approximately 32 km (17 nmi) southeast of the proposed LA-3 site, is home to the largest amphibious marine training base on the west coast. Many of the base activities require unencumbered maneuvering space for surface vessels, submarines, and aircraft. These exercises are conducted throughout the year. In addition to the exercises at Camp Pendleton, the Navy maintains a weapons station at Seal Beach (NAVWPNSTA Seal Beach). Munitions are loaded into cruisers, destroyers, frigates, and medium-sized amphibious ships from the facility's 305-meter-long (1,000-foot-long) wharf located in Anaheim Bay. Anaheim Bay is approximately 22 km (11.9 nmi) northeast of LA-2 and approximately 30 km (16.2 nmi) northwest of the proposed LA-3 site.

In the vicinity of LA-2 and LA-3 there are currently 12 oil and gas lease tracts within the jurisdiction of the State of California. Of these twelve tracts, ten are producing, one is used for water injection, and one is not producing. Currently, four artificial islands and three platforms associated with these lease tracts are located within State waters and all of the facilities in State waters are within 3.3 km (1.8 nmi) of the coast. In addition to the tracts under State jurisdiction, there are 4 lease tracts located in federal waters in the vicinity of LA-2 and LA-3. There are four platforms located within three of these tracts; however, all four tracts have been developed. These platforms lie approximately 14 to 17 km (7.5 to 9 nmi) to the east of the LA-2 site. The distance from the proposed LA-3 site to these platforms ranges from approximately 22 to 25 km (12 to 13.5 nmi). No new oil or gas development has been proposed in the immediate vicinity of the LA-2 or proposed LA-3 sites.

Recreational activities in the vicinity of the LA-2 and proposed LA-3 sites include sportfishing, recreational boating including whale watching, sailing, and fishing, surfing, diving, sunbathing, beachcombing, swimming, snorkeling, sightseeing, and picnicking. Due to the depth and location of the proposed LA-3 and LA-2 ODMDSs, partyboat fishing is the type of sportfishing most likely to occur in the vicinity of both sites. Partyboat fishing off Los Angeles and Orange Counties usually occurs in relatively shallow waters (less than 100 m [328 ft]) at reefs (natural or artificial) and kelp beds, areas where fish aggregate. During the summer, additional fishing occurs further offshore for coastal pelagic species such as yellowtail and tunas.

Offshore islands are one of the major attractants to ocean going recreational boating. Santa Catalina Island is approximately 35 to 50 km (18.9 to 27 nmi) from the major harbors. Because of the island's relative proximity to the mainland and its relatively unrestricted and major anchorages, most pleasure boat traffic to the offshore islands travels between the mainland harbors and the harbors on Santa Catalina Island. The boats generally follow a straight path between the island and mainland, and these routes often come near to the LA-2 and LA-3 sites. In addition to privately owned pleasure boats, regular ferry service operates between Santa Catalina Island and the Harbors at Los Angeles, Long Beach, Newport Beach, and Dana Point.

All other recreational activities in the vicinity of LA-2 and LA-3 occur away from the disposal sites.

The southern California coast has had a long period of human occupation, both prehistoric and historic. As a result the coast of the mainland and Channel Islands contain numerous archaeological, historical, and cultural resources. The offshore regions are also thought to contain a number of these resources. However, there are no documented shipwrecks or other cultural resources within 5 km (2.7 nmi) of either the proposed LA-3 or LA-2 sites.

ES.4 Environmental Consequences

Potential environmental consequences associated with the ocean disposal of dredged material corresponding to the alternatives evaluated in this EIS are summarized in Table 4.1-1 (Chapter 4). The impact category (level of impact) as well as the spatial and temporal extents of the potential impacts for each of the analyzed environmental conditions are identified in this table.

Potential effects resulting from dredged material ocean disposal on air quality, water quality parameters (e.g., suspended particle concentrations), and sea floor conditions (bottom deposit thicknesses) were evaluated using computer models to simulate the disposal activities under each of the alternatives. Additional information from monitoring and research activities at and in the vicinity of the LA-2 and LA-3 disposal sites was also used in the evaluation of potential impacts.

ES.4.1 Physical Environment

Impacts resulting from the ocean disposal operations on air quality are potentially significant for all of the alternatives under worst-case conditions. However, assuming more realistic average annual disposal activities, air quality emissions are not anticipated to be significant for the Preferred Alternative (local use of LA-2 and LA-3) and the No Action Alternative. Even assuming average annual conditions, air quality emissions are estimated to be potentially significant for Alternatives 2 (maximize use of LA-2) and 4 (maximize use of LA-3).

Impacts from dredged material disposal operations on water quality and geology are considered insignificant regardless which alternative is chosen. Based on sediment deposition modeling, deposits thicknesses greater than 30 cm (1 ft) will be confined within the LA-2 and proposed LA-3 site boundaries for all alternatives considered. Changes in sediment particle size distribution at LA-2 and LA-3 will likely continue as a result of dredged material disposal. These effects are considered locally not significant. Significant impacts on sediment quality at either of the sites are not expected given that the dredged material proposed for ocean disposal must be tested and determined suitable according to EPA and USACE testing criteria that include specific tests for water column impacts.

ES.4.2 Biological Environment

Impacts to infauna, epifauna, and fishes are anticipated to be temporary and limited to the areas within the boundaries of the disposal sites. Impacts to the benthic community are anticipated to be greatest as a result of smothering of some organisms and alteration of sediment characteristics. However, these impacts are expected to only occur in areas with annual deposition thicknesses equal to or exceeding 30 cm (1 ft). Areas with depositional thicknesses less than 30 cm (1 ft) are not expected to incur significant changes in abundance or diversity of infauna, epifauna, or demersal fishes. As indicated above,

deposition thicknesses of 30 cm (1 ft) or more are anticipated to be confined within the LA-2 and proposed LA-3 site boundaries for all alternatives. Consequently, impacts to these organisms are not anticipated to be significant.

Impacts on water column organisms such as plankton, pelagic fishes, and marine mammals are expected to be minimal, temporary, and limited to the area within the site boundaries. No significant impacts to seabirds are anticipated for any of the alternatives. Furthermore, the exposure of marine organisms and other fauna to dredged material is not expected to result in significant adverse effects given that the dredged material proposed for ocean disposal must be tested and determined suitable according to EPA and USACE testing criteria.

ES.4.3 Socioeconomic Environment

Dredged material disposal activities have occurred at the LA-2 and LA-3 sites since the late 1970s. The continued use of these sites is unlikely to interfere with other ocean uses such as shipping, fishing, and recreation. Effects on commercial and recreational fishing in the vicinity of the LA-2 and LA-3 sites will be temporary and insignificant.

Additionally, most disposal impacts will be at the sea bottom and no significant demersal fisheries exist within the LA-2 or proposed LA-3 site boundaries.

Potential hazards to commercial, military, and recreational navigation resulting from the transport and disposal of dredged material at the sites are also expected to be insignificant. Vessel traffic in the region is highly regulated and conflicts with disposal barges are anticipated to be minimal. There have been no impacts to commercial, military, or recreational vessel traffic due to the past use and operation of the LA-2 or interim LA-3 sites. As such, no significant impacts to navigation are anticipated with the continued use of these sites. There are no existing or planned oil developments within the LA-2 or proposed LA-3 site boundaries. Consequently, the continued use of these sites for the ocean disposal of dredged material is not anticipated to have an adverse impact on development of these resources.

There are no known cultural or historical resources within the LA-2 or LA-3 site boundaries. As such, continued disposal operations at these sites will not adversely impact cultural or historical resources. Potential impacts to human safety would be very small as the number of disposal barge trips, even under worst-case conditions, is small compared to the overall vessel traffic in the region. The Preferred Alternative would minimize the coastwise disposal barge traffic that could potentially come in contact with existing developed oil facilities. However, such potential conflicts are considered insignificant for all of the alternatives. As stated in the MPRSA, the disposal of materials that are considered hazardous is prohibited at an ODMDS. Furthermore, as mentioned previously, dredged material proposed for ocean disposal will be subject to strict testing requirements established by the EPA and USACE. Material found not to be suitable for ocean disposal will be prohibited from disposal at either LA-2 or LA-3. Therefore, the potential for human health and safety hazards is minimal and not significant for all of the alternatives.

ES.5 Comparison of the Alternative Ocean Disposal Sites with the 5 General and 11 Specific Site Selection Criteria

The Preferred Alternative (Alternative 3) and remaining alternatives are compared to the 5 general criteria listed at 40 CFR 228.5 and the 11 specific site selection criteria listed at 40 CFR 228.6(a). A summary of the 11 site selection criteria is also contained in Table 2.2-1 (Chapter 2).

ES.5.1 General Selection Criteria

- 1. The dumping of materials into the ocean will be permitted only at sites or in areas selected to minimize the interference of disposal activities with other activities in the marine environment, particularly avoiding areas of existing fisheries or shellfisheries, and regions of heavy commercial or recreational navigation.**

Dredged material disposal activities have occurred at the LA-2 and LA-3 sites since the late 1970s. Historical disposal at the interim LA-3 site has not interfered with commercial or recreational navigation, commercial fishing, or sportfishing activities. Disposal at the LA-2 site, while located within the U.S. Coast Guard Traffic Separation Scheme, has not interfered with these activities. The continued use of these sites would not change these conditions.

- 2. Locations and boundaries of disposal sites will be so chosen that temporary perturbances in water quality or other environmental conditions during initial mixing caused by disposal operations anywhere within the site can be expected to be reduced to normal ambient seawater levels or to undetectable contaminant concentrations or effects before reaching any beach, shoreline, marine sanctuary, or known geographically limited fishery or shellfishery.**

The LA-2 and LA-3 sites are sufficiently removed from shore and limited fishery resources to allow water quality perturbations caused by dispersion of disposal material to be reduced to ambient conditions before reaching environmentally sensitive areas.

- 3. If at any time during or after disposal site evaluation studies, it is determined that existing disposal sites presently approved on an interim basis for ocean dumping do not meet the criteria for site selection set forth in Sections 228.5 through 228.6, the use of such sites will be terminated as soon as suitable alternate disposal sites can be designated.**

Evaluation of the LA-2 and LA-3 sites indicates that they presently do and would continue to comply with these criteria. Additionally, compliance will continue to be evaluated through implementation of the Site Monitoring and Management Plan.

- 4. The sizes of the ocean disposal sites will be limited in order to localize for identification and control any immediate adverse impacts and permit the implementation of effective monitoring and surveillance programs to prevent adverse long-range impacts. The size, configuration, and location of any disposal site will be determined as a part of the disposal site evaluation or designation study.**

The LA-2 and proposed LA-3 disposal sites consist of circular areas with a 915-m (3,000-ft) radius. The size of the sites has been determined by computer modeling to limit

environmental impacts to the surrounding area and facilitate surveillance and monitoring operations. The designation of the size, configuration, and location of sites was determined as part of this evaluation study.

5. EPA will, wherever feasible, designate ocean dumping sites beyond the edge of the continental shelf and other such sites that have been historically used.

The proposed LA-3 site is located beyond the continental shelf, near a canyon on the continental slope. This site has also been used historically for the disposal of dredged material. LA-3 is the only site that fully meets the above criteria.

The LA-2 site, which has been permanently designated for the ocean disposal of dredged material, is located near the edge of the continental shelf at the 183 m (600 ft) contour.

The LA-2 site has been used for the ocean disposal of dredged material since 1977.

ES.5.2 Specific Selection Criteria

1. Geographical position, depth of water, bottom topography, and distance from the coast.

Centered at 33°31'00" N, 117°53'30" W, the LA-3 bottom topography is gently sloping from approximately 460 to 510 m (1,500 to 1,675 ft). Situated near the slope of a submarine canyon, the site center is approximately 8.5 km (4.5 nmi) from the mouth of Newport Harbor.

The LA-2 site is at the top edge of the continental slope in approximately 110 to 340 m (360 to 1,115 ft) of water. Centered at 33°37'06" N and 118°17'24" W, the LA-2 site is located just south of the San Pedro Valley submarine canyon approximately 11 km (5.9 nmi) from the entrance to Los Angeles Harbor.

2. Location in relation to breeding, spawning, nursery, feeding, or passage areas of living resources in adult or juvenile phases.

The LA-2 and LA-3 sites are located in areas that are utilized for feeding and breeding of resident species. The LA-3 site is located in the gray whale migration route area, while the LA-2 site is located near the migration route. The California gray whale population was severely reduced in the 1800s and 1900s due to international whaling. However, protection from commercial whaling was initiated in the 1940s that has allowed the population to recover. There is no indication that disposal activities at LA-2 or LA-3 have adversely affected the gray whale.

There are no known special breeding or nursery areas in the vicinity of the two disposal sites.

3. Location in relation to beaches and other amenity areas.

The proposed LA-3 site boundary is located over 6.5 km (3.5 nmi) offshore of the nearest coast in the Newport Beach and Harbor area; the LA-2 site boundary is located over 8.5 km (4.6 nmi) offshore of the nearest coast in the Palos Verdes area. Other beach areas are more distant.

4. Types and quantities of wastes proposed to be disposed of, and proposed methods of release, including methods of packaging the waste, if any.

Dredged material to be disposed of will be predominantly clays and silts primarily originating from the Los Angeles/Long Beach Harbor area and from Newport Bay and Harbor. Worst-case annual disposal volumes at LA-3 range from 0 to approximately 3.20 million yd³ (0 to 2.45 million m³) depending on the alternative chosen. Average annual disposal volumes at LA-3 range from 0 to approximately 322,000 yd³ (0 to

246,000 m³). Worst-case annual disposal volumes at LA-2 range from 439,000 yd³ to approximately 3.64 million yd³ (336,000 to 2.78 million m³) depending on the alternative chosen. Average annual disposal volumes at LA-2 range from 68,000 yd³ to approximately 390,000 yd³ (52,000 to 298,000 m³).

Dredged material is expected to be released from split hull barges. No dumping of toxic materials or industrial or municipal waste would be allowed. Dredged material proposed for ocean disposal is subject to strict testing requirements established by the EPA and USACE.

5. Feasibility of surveillance and monitoring.

The EPA (and USACE for federal projects in consultation with EPA) is responsible for site and compliance monitoring. USCG is responsible for vessel traffic-related monitoring. Monitoring of the disposal sites is feasible but somewhat complicated by topography. At LA-3 this complication is reduced by relocation of the proposed permanent LA-3 site away from underwater canyons.

6. Dispersal, horizontal transport, and vertical mixing characteristics of the area, including prevailing current direction and velocity, if any.

Currents and vertical mixing will disperse fine sediments. Prevailing currents are primarily parallel to shore and flow along constant depth contours. Situated near the slope of a submarine canyon, the LA-3 area would be expected to receive sedimentation from erosion and nearshore transport into the canyon. At LA-2, some sediment transport offshore occurs due to slumping. Overall, sediments at both sites are expected to settle offshore (as opposed to onshore).

Chapter 4 of this EIS includes a discussion of the sediment deposition modeling along with the anticipated sediment accumulations resulting from the proposed disposal activities.

7. Existence and effects of current and previous discharges and dumping in the area (including cumulative effects).

Localized physical impacts have occurred to sediments and benthic biota due to past disposal operations. These effects have not created a significant adverse impact on the environment. No interactions with other discharges are anticipated due to the distances from the discharge points.

8. Interference with shipping, fishing, recreation, mineral extraction, desalination, fish and shellfish culture, areas of special scientific importance, and other legitimate uses of the ocean.

Continued use of the LA-2 and proposed LA-3 sites would result in minor interferences with commercial and fishing vessels due to disposal barge traffic. Sites are not located within active oil or natural gas tracts. Continued disposal operations are not anticipated to adversely impact existing nearby oil and gas development facilities or tracts, or other socioeconomic resources.

9. Existing water quality and ecology of the site as determined by available data or by trend assessment or baseline surveys.

Water quality in the two disposal areas is good, but temporary, localized physical impacts have occurred to sediments and benthic ecology due to past disposal operations. Additionally, dredged material deposited at the two disposal areas in the past was chemically screened prior to disposal and no known dredged material was disposed of for which chemical concentrations exceeded EPA toxic concentration limits.

10. Potentiality for the development or recruitment of nuisance species in the disposal site.

Unknown, but the potential is low due to depth differences between the disposal sites and the likely sources of dredged material.

11. Existence at or in close proximity to the site of any significant natural or cultural features of historical importance.

No known shipwrecks or other cultural resources occur within 5 km (2.7 nmi) of either the LA-2 or proposed LA-3 disposal sites.

ES.6 Conclusion

The No Action Alternative does not meet the goals and objectives for the availability of an ocean site for the continued disposal of dredged material anticipated to be generated in the Orange County region. Impacts resulting from disposal of dredged material under the Preferred Alternative (local use of LA-2 and LA-3) are expected to be minimal for the following reasons:

- The availability of two disposal sites provides more flexibility in managing the dredged material disposal needs for the region;
- Air quality emissions are anticipated to be potentially significant for the Preferred Alternative under worst-case yearly disposal assumptions but not for anticipated average annual disposal assumptions. These potentially significant air quality impacts can be avoided through the dredged material disposal permitting process. In contrast, air quality emissions associated with Alternative 2 (maximize use of LA-2) and Alternative 4 (maximize use of LA-3) are anticipated to be potentially significant under both worst-case and average annual disposal assumptions. As such, the potentially significant air quality impacts cannot be avoided for these two alternatives;
- Computer simulations in conjunction with bathymetric and sediment surveys indicate that the LA-2 and proposed LA-3 sites are located in depositional areas that are likely to retain dredged material which reaches the ocean floor. Chapter 4 of this EIS includes a discussion of the sediment deposition modeling along with the anticipated sediment accumulations resulting from the proposed disposal activities;
- No significant impacts to other resources or amenity areas (e.g., marine sanctuaries, beaches, etc.) are expected to result regardless which of the alternatives is selected;
- Existing and potential fisheries resources within the LA-2 and proposed LA-3 sites are minimal;
- Potential impacts to benthic infauna and epifauna are anticipated to be localized and limited to the area within the LA-2 and proposed LA-3 site boundaries and thus not significant;
- Potential impacts to fishes, marine mammals, seabirds, and other midwater organisms are expected to be insignificant regardless which of the alternatives is selected; and
- Dredged material disposal has occurred historically at the permanent LA-2 and interim LA-3 sites since the 1970s.